Milkweed Bugs, Limited

Name _____
Date _____
Period ____

Milkweed bug Reproductive Potential

1. Milkweed bugs live 4 months and begin mating when they are 2 months old. Each female is capable of laying 100 eggs in her lifetime. Usually in a clutch of eggs 50% are males and 50% are females so the young are evenly balanced between males and females.
2. Based on this information, estimate how many milkweed bugs there would be at the end of the year if nothing limited the number of survivors. In other words there are no predators, there is plenty of food, water, space, everything that they need.

   Estimate for the end of one year: (1/2 point)

3. What is the number of milkweed bugs that is possible at the end of the year?

4. How did you do with your estimate? (1/2 point)

Background:

1. What is a limiting factor?

2. Give three examples of abiotic limiting factors.

3. Give three examples of biotic limiting factors.

Discussion:

For all the following questions assume that you are comparing the unlimited reproductive potential against what might happen with a possible limiting factor or the elimination of a possible limiting factor.

1. How many milkweed bugs were there after three generations of unlimited population growth? (1/2 point)

Be specific as possible in answering these questions.

2. Space can be a limiting factor for milkweed bugs especially in experimental situations. How might decreasing the available space affect the population size after three generations? (1/2 point)

3. How might only 10% of eggs being female (90% would be male) change the population size after three generations? (1/2 point)

4. How might having 90% of eggs being female change the population size after three generations? (1/2 point)

5. How might having only 20 eggs per female change the population size after three generations? (1/2 point)

6. How might having 150 eggs per female change the population size after three generations? (1/2 point)

7. How might the population size change after three generations if the female can lay eggs only after she is 3 months old?(1/2 point)

8. How might the population size change after three generations if the female can lay eggs only after she is almost 4 months old? (1/2 point)

9. How might having only 50% of the eggs surviving affect the population size after three generations? (1/2 point)

10. How might having only 75% of the eggs surviving affect the population size after three generations? (1/2 point)